

# PATENT ABSTRACTS OF JAPAN

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(71)Applicant : RICOH CO LTD

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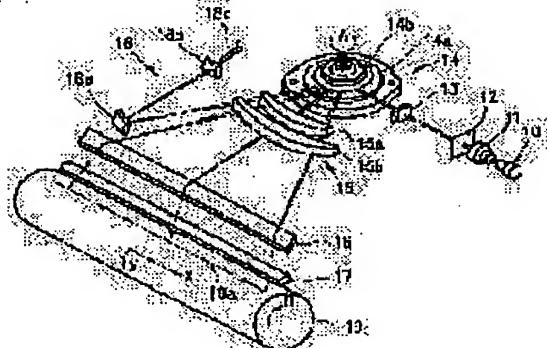
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## (54) IMAGE FORMING APPARATUS

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To provide an image forming apparatus capable of surely forming the first synchronism detection signal even when a light intensity of a laser beam in a time period from starting of the emission to obtaining of the first synchronism signal is lower than that in the normal image forming time.

**SOLUTION:** A laser beam is emitted on a photosensitive body 19 such that it is expanded in a main scanning direction (x) by a polygon mirror 14b and is collected in a sub-scanning direction (y) by a second cylinder lens 17. The laser beam reflected by a synchronism detection mirror 18a is collected into an optical fiber 18c by means of a synchronism detection cylinder lens 18b and is subjected to photoelectric conversion by means of a PinPD on a control substrate to be converted to a synchronism signal. In this structure, when a laser diode is turned on for obtaining the initial synchronism signal from a stopping time of a scanning means, an optical intensity of the laser beam in a time period from starting of the emission to the first synchronism signal is set to a relationship of 'minimum optical intensity Pdt ≤ optical intensity Pld of the laser beam < minimum optical intensity Pim for manifesting the image'. As a result, it is possible to eliminate manifesting of the image of an electrostatic latent image due to a needless exposure line.



### LEGAL STATUS

[Date of request for examination]

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光系系の粗略構成を示す。  
【図2】レーザ検査光系系を用いた面像形が装置の一例としてのレザープリントのプロック構成図を示す。

光学系の構成を示す。

【図 2】レーザ複屈折光学系を用いた画像形成装置の一例としてのレーザプリントのプロック構成図を示す。

【図 3】同期信号生成回路の構成例を示す。

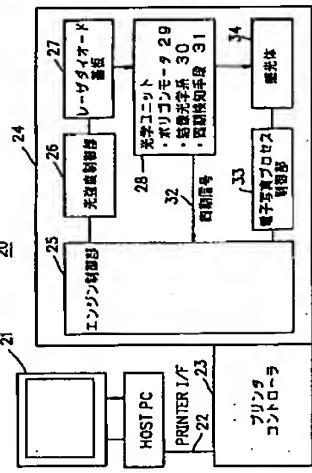
【図 4】(a) 入射光強度による PIN PD 出力の変化および (b) に  $V_{ref}$  による同期信号幅の対時間  $t$  の特性変化を示す。

【図 5】本研究の実験形態の回路構成例 1 のプロック図を示す。

【図 6】回路構成例 1 の動作フローチャートを示す。

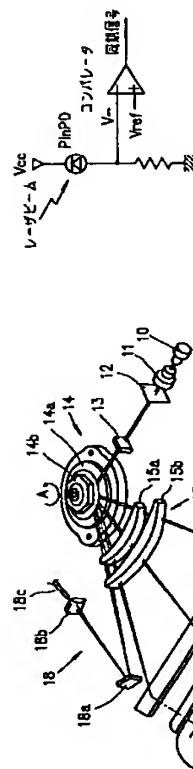
|       |            |
|-------|------------|
| 1.5   | レンズ        |
| 1.6   | ミラー        |
| 1.7   | 第2シリダレンズ   |
| 1.8 a | 同期校正シリダレン  |
| 1.8 b | 同期校正シリダレン  |
| 1.8 c | 光ファイバ      |
| 1.9   | 感光体        |
| 2.0   | レーザプリンタ    |
| 2.1   | ホストPC      |
| 2.2   | プリンタ1/F    |
| 2.3   | プリンタコントローラ |
| 2.4   | プリンタエンジン   |
| 2.5   | エンジン制御部    |
| 2.6   | 光強度制御部     |
| 2.8   | 光学ユニット     |
| 3.1   | 同期校択手段     |
| 3.2   | 同期信号       |
| 3.3   | 電子写真プロセス   |
| 3.4   | 感光体        |

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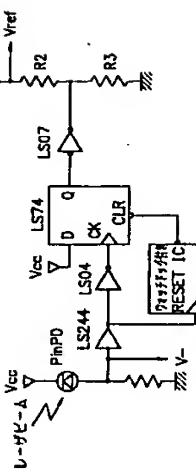


[图7]

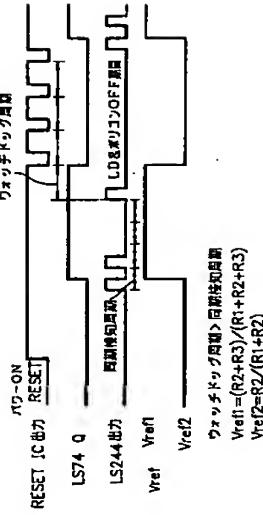
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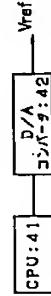
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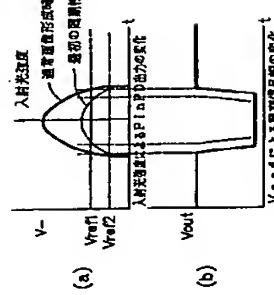
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